

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Lin Davis	Art Unit :	2612
Serial No. :	10/613,720	Examiner :	Eric Blount
Filed :	July 3, 2003	Conf. No. :	4972
Title :	FUEL DISPENSER IGNITION SOURCE DETECTOR		

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Pursuant to 37 C.F.R. § 41.41, Appellants respond to the Examiner's Answer by respectfully noting that the Answer suffers from the same defects that the prior Office Actions suffered from: improper assertions outside the constraints of the references and failing to consider the cited references in their entirety including sections that teach away from the proposed combination.

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The Proposed Combination Fails to Teach or Suggest Each Limitation

The Answer mischaracterizes *Castleman* when asserting that the flame detector 12 is configured to detect sparks or embers. *See* Examiner's Answer, page 4. In fact, the flame detector 12 is specifically designed to only detect flames and to exclude other radiant sources, such as sparks or embers. *See Castleman*, Col. 4, lines 21-27. After measuring radiant energy in the visible band, the near band infrared, and wide infrared spectrums, the flame detector 12 compares the combined spectrums to different patterns of a flame or fire. *See id.*, Col. 4, lines 11-14. In response to the combined spectrum matching one of the flame patterns, the flame detector 12 transmits a signal indicating a detection of a flame. Col. 4, lines 28-32. In the event that the flame detector 12 measures other radiant sources active in the spectrum, the flame detector 12 disregards the signals as a flicker. Col. 4, lines 22-27. In other words, not only does *Castleman* fail to teach or suggest detecting an ember or spark, but in fact, *Castleman* teaches away from using the flame detector 12 to detect radiant sources other than flames or fires.

Both Castleman and Tatsuno Teach Away From the Proposed Combination

The Answer fails to consider the entirety of both *Castleman* and *Tatsuno*. As discussed above, *Castleman* teaches away from using the flame detector 12 to sparks or embers. Indeed, the flame detector 12 disregards signals measured from radiant sources that do not match flame patterns. Col. 4, lines 22-27. Only in response to determining that a radiant source is a flame does the detector transmit a detection signal. Col. 4, lines 28-32.

In regards to *Tatsuno*, this reference teaches away from detecting radiant energy in the infrared spectrum. As indicated in the Appeal Brief, *Tatsuno* merely teaches monitoring a predetermined frequency for detecting portable phones that may transmit electromagnetic-waves that interfere with gas-station equipment or whose use may result in an electrostatic discharge. *Tatsuno*, Col 3, Lines 30-33; Col. 1, Lines 13-25. Indeed, the disclosed system is designed to monitor individual channels centered around individual frequencies, *not* a band of frequencies. Furthermore, portable phones, as is well known in the art, transmit signals at radio frequencies which have significantly lower frequencies than infrared, and thus, such infrared signals are significantly stronger than radio frequencies. The Answer fails to explain if or how the system

disclosed in *Tatsuno* can process orders of magnitude greater signal strength as compared with radio frequencies. Furthermore, the system disclosed in *Tatsuno* merely monitors individual radio frequencies, so the *Tatsuno* system would have to be redesigned to handle the significantly higher signal strengths as well as monitoring frequency bands as compared to individual channels.

Summary of Claimed Invention

Independent claim 1 is directed to a fuel dispensing station (*e.g.*, 100, Page 7, lines 16-17) including a fuel dispenser (*e.g.*, 200, Page 8, lines 4-11), an ignition source detector (*e.g.*, 310, Page 8, lines 1-2), and a control unit (*e.g.*, 220, page 8, lines 12-15). The ignition source detector (*e.g.*, 310, Page 8, lines 1-2) is operable to directly detect a spark or an ember in proximity to the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of the unwanted ignition source. *See* Page 6, lines 21-23. The ignition source detector (*e.g.*, 310, Page 8, lines 1-2) is located on the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11). *See* Page 8, lines 1-2. The control unit (*e.g.*, 220, page 8, lines 12-15) which receives said detection signal and transmits a control signal to said fuel dispenser (*e.g.*, 200, Page 8, lines 4-11). *See* Page 8, lines 12-15. The fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) responds to said control signal by inhibiting the dispensing of fuel independently of other fuel dispensers. *See* Page 9, lines 6-8.

Independent claim 13 is directed to a fuel dispensing station (*e.g.*, 100, Page 7, lines 16-17) including a fuel dispenser (*e.g.*, 200, Page 8, lines 4-11), a fuel-management unit (*e.g.*, 300, Page 6, lines 9-10), and a control unit (*e.g.*, 220, page 8, lines 12-15). The ignition source detector (*e.g.*, 310, Page 8, lines 1-2) is operable to directly detect a spark or an ember in proximity to the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of the unwanted ignition source. *See* Page 6, lines 21-23. The fuel-management unit (*e.g.*, 300, Page 6, lines 9-10) is operable to transmit said detection signal detected by said source detector to at least one communicator (*e.g.*, 312, 314, Page 6, lines 12-13). *See* Page 6, lines 10-14. The control unit

(*e.g.*, 220, page 8, lines 12-15) which receives said detection signal and generates a control signal for output to said fuel dispenser. *See* Page 7, lines 6-8. The fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) responds to said control signal by inhibiting the dispensing of fuel independently of other fuel dispensers. *See* Page 7, lines 6-8.

Independent claim 14 is directed to a method for preventing unintended ignition in a fuel dispensing environment (*e.g.*, 100, Page 7, lines 16-17) including directly detecting a spark or an ember within proximity to a fuel dispenser (*e.g.*, 200, Page 8, lines 4-11). *See* Page 12, lines 7-10. The spark or ember is detected by the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11). *See* Page 12, lines 6-7. The detection of the spark or the ember is communicated to at least one of a customer, an onsite personnel, and an offsite personnel. *See* Page 6, line 21 to Page 7, line 1. The delivery of fuel by the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) is suspended in reaction to the detection of the ignition source independently of other fuel dispensers. *See* Page 10, lines 14-16.

Independent claim 22 is directed to a system for dispensing fuel (*e.g.*, 100, Page 7, lines 16-17) including a fuel dispenser (*e.g.*, 200, Page 8, lines 4-11), a communicator (*e.g.*, 312, 314, Page 7, lines 1-2), and a control unit (*e.g.*, 220, page 8, lines 12-15). The ignition source detector (*e.g.*, 310, Page 8, lines 1-2) is operable to directly detect a spark or an ember in proximity to the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) and transmit a detection signal upon detecting at least one of a spark or an ember. *See* Page 6, lines 21-23. The ignition source detector (*e.g.*, 310, Page 8, lines 1-2) is located on the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11). *See* Page 8, lines 1-2. The fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) is for the delivery of fuel into containers or vehicles. *See* Page 8, lines 3-9. The communicator (*e.g.*, 312, 314, Page 7, lines 1-2) is for

communicating with either sound or light to at least one of a customer in the vicinity of the fuel dispenser, an onsite personnel, and an offsite personnel. *See* Page 6, line 21 to Page 7, line 2. The control unit (*e.g.*, 220, page 8, lines 12-15) is operably connected with the ignition source detector, fuel dispenser, and communicator and adapted to receive the detection signal transmitted by the ignition source detector and in reaction to the detection signal transmit at least one control signal. *See* Page 9, lines 1-12. The fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) receives the control signal and suspends the delivery of fuel independently of other fuel dispensers, and the communicator (*e.g.*, 312, 314, Page 7, lines 1-2) receives the control signal and communicates the detection of an ignition source. *See* Page 7, lines 1-10.

Independent claim 27 is directed to (*e.g.*, 100, Page 7, lines 16-17) including a fuel dispenser (*e.g.*, 200, Page 8, lines 4-11), an ignition source detector (*e.g.*, 310, Page 8, lines 1-2), and a control unit (*e.g.*, 220, page 8, lines 12-15). The ignition source detector (*e.g.*, 310, Page 8, lines 1-2) is operable to directly detect a spark or an ember in proximity to the fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) and, in response to detecting an unwanted ignition source, transmit a detection signal indicating the presence of a spark or an ember. *See* Page 6, lines 21-23. The control unit (*e.g.*, 220, page 8, lines 12-15) receives said detection signal and transmits a control signal to said fuel dispenser (*e.g.*, 200, Page 8, lines 4-11). *See* Page 7, lines 2-10. The fuel dispenser (*e.g.*, 200, Page 8, lines 4-11) responds to said control signal by inhibiting the dispensing of fuel. *See id.*

For these reasons, and the reasons stated in the Appeal Brief, Applicant submits that the final rejection should be reversed.

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Respectfully submitted,

Date: May 14, 2007

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